



Lewis & Clark Fort Mandan Visitor Services Center

The Fort Mandan Visitor Services Center serves as the entrance platform for visitors to the replica of the 1804–1805 winter home of the Lewis and Clark Expedition.

Long before the Expedition set its course up the Missouri River, President Thomas Jefferson instructed Meriwether Lewis on what to set down in his daily journal, "Other objects worthy of notice will be...the mineral productions of every kind; but more particularly metals, limestone, pit coal...."

Today the energy industry thrives in North Dakota. Within a 50-mile radius of Fort Mandan at Washburn, there are four major lignite coal mines that produce over 30 million tons annually. The state's coal reserves produce electricity for hundreds of thousands of Americans.

Throughout the Fort Mandan Visitor Services Center are innovative materials manufactured with coal combustion products, primarily using fly ash. FlexCrete from ISG Resources, Inc. is the primary building material used in the interior and exterior walls.

Concrete used in the driveway and parking lot and all of the flooring throughout the building is fly ash-based, with a subbase of bottom ash. This makes the concrete stronger, more durable and easier to work. All of the fly ash and bottom ash was donated by Great River Energy.

The interior walls of the building are covered with Magna Wall stucco containing fly ash. Cultured Stone containing fly ash from Owens Corning and Strata Corporation envelops the exterior of the building and is used in the impressive fireplaces inside.

Mannington Carpets donated carpeting that contains fly ash for the offices and lodge classroom. Even the ceiling tile has fly ash in it. Synthetic gypsum (derived from scrubber sludge) wallboard from Standard Gypsum and the Tennessee Valley Authority makes up much of the interior walls and ceilings.

In addition to serving as the gateway to a remarkable historical attraction, the Fort Mandan Visitor Services Center offers insights into the environmental stewardship efforts of the energy industry. Members of the Lignite Energy Council have made significant cash contributions to the construction of the facility and include MDU Resources Group, Great River Energy, Basin Electric Power Cooperative, BNI Coal, Minnesota Power, Minnkota Power Cooperative, Westmoreland Coal Company, Otter Tail Power Company, Border States Electric, Xcel Energy Foundation, and Industrial Contractors Inc./API Group. Other donors include Western Region Ash Group, Coronado Products, Northern Improvement Company, and Scheels All Sports. Long-term maintenance of the facility is being made possible by a special gift to the Foundation's endowment trust from The Falkirk Mining Company and Coteau Properties.

For more information about Fort Mandan, visit www.fortmandan.com.

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This coal ash utilization case study is a selection of the Coal Combustion Product Partnership. For more information, consult the C2P2 web site at <http://www.epa.gov/epaoswer/osw/conserves/c2p2/>

Case Study

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Page 1 of 1